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EXAMINER	
WESSENDORF, TERESA D	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/856,859	BATTERSBY ET AL.	
	Examiner	Art Unit	
	TERESA WESSENDORF	1639	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 November 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *15,18-19,21-24, 26-29,63,65 and 66* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *15,18-19,21-24, 26-29,63,65 and 66* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of the Claims

Claims 15, 18-19, 21-24, 26-29, 63, 65 and 66 are pending and under examination in the application.

Withdrawn Rejection

In view of the amendments to the claims and applicants' arguments the 35 USC 112 rejections is withdrawn. Also, the 35 USC 102 over Egner and Seul are withdrawn.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Priority

Applicants' claim for foreign priority is not perfected because the foreign priority document fails to provide adequate support for the currently claimed invention under 35 U.S.C. 112, first paragraph (e.g., see MPEP § 706.02(b), "The filing date of the [foreign] priority document is not perfected unless ... the examiner has established that the priority document satisfies the enablement and description requirements of 35 U.S.C. 112, first paragraph"; see also In re Gosteli, 872 F.2d 1008, 10

USPQ2d 1614 (Fed. Cir. 1989) (generic and subgeneric claims in the U.S. application were not entitled to the benefit of foreign priority where the foreign application disclosed only two of the species encompassed by the broad generic claim and the subgeneric Markush claim that encompassed 21 compounds). Here, Australian Patent PP7372 (referred to herein as '372) filed 11/30/1998 fails to provide adequate support under 35 U.S.C. § 112 for the currently claimed invention. Specifically, '372 fails to provide support for the limitation wherein "said code is the same before, during and after said combinatorial synthesis". If applicants believe this to be in error, applicants must disclose where in the specification support for these limitations can be found (i.e., page and line number). Therefore the filing date of the instant application is deemed to be the filing date of PCT/AU99/O1065, November 30, 1999.

Claim Rejections - 35 USC § 102-Necessitated by Amendments

Claims 15, 18-19, 21-24, 26-29, 63, 65 and 66, as amended, are rejected under 35 U.S.C. 102(e) as being anticipated by Natan et al. (U.S. Patent No. 7,225,082 B1) (Priority to **October 1, 1999** via 60/157,326).

For ***claim 15***, Natan et al. disclose a plurality of carriers

on which a plurality of different compounds can be synthesized (e.g., see abstract; see also figure 1; see also column 3, lines 40-53, "Also included within the present invention is an assembly or collection of particles comprising a plurality of types of particles, wherein each particle is from 20 nm to 50 pm in length and is comprised of a plurality of segments, and wherein the types of particles are differentiable"). Natan et al. also disclose a population of detectably distinct carriers (e.g., see column 3, lines 40-5) wherein each carrier is covalently coupled to a synthon suitable for use in combinatorial synthesis (e.g., see column 9, paragraph 3, "In many embodiments of the present invention, one or more segments of the particle, the ends of the particle, or the entire particle may be functionalized. By functionalization, or attachment of a functional unit, it is meant that some species or material is covalently or noncovalently attached to the surface of the particle. Examples of functionalization include the attachment, often via a linker, to an antibody or antibody fragment, to an oligonucleotide or a to a detectable tag; see also column 10, paragraph 1; see also column 24, paragraph 2, "One of the well known methods are used to affix the 45-mer to the surface: one involves the use of thiol-labeled DNA, and another uses standard EDC coupling to amine terminated DNA"; see

also column 25, second to last paragraph, “oligonucleotides will be attached chemically (i.e., by covalently adsorption of thiols”; see also column 27, paragraph 1; see especially column 27, paragraph 2, “nanorods are synthesized possessing SAMs terminated with carboxyl functionality by reacting the rods with o-carboxy alkanethiols. The carboxyl functionality is then activated to an anhydride for further reaction with a wide variety of amines with diverse functional groups … [including] dextran lactones … Subsequent cleavage of the lactone with amines carrying diverse functional groups yields a library of hydroxy amides of dextran coated nanoparticles … By appropriately choosing and designing structurally different amine reactant cocktails for derivatization, there is an opportunity to create a vast library of surfaces. These combinatorially-derivatized nanoparticles present surfaces with varying avidity for binding to the wide variety of molecules present in a biological sample”; see also column 18, paragraph 2; see also column 26, paragraph 2). Please note that any of the covalently attached molecules set forth above including the SAMS, nucleic acids of the oligonucleotide, amino acids of the antibody, dextran lactones, amine carrying diverse functional groups, etc. could be considered as “synthons suitable for use in combinatorial synthesis” because all have been used to make

libraries. In addition, Natan et al. disclose carriers having a code which distinctively identifies a respective carrier before during and after said synthesis from other carriers (e.g., see abstract; see also figure 1; see also column 3, lines 40-57; see also column 4, last paragraph describing these segmented nanoparticles as "bar codes"). In addition, Natan et al. disclose that the carriers are characterized by at least two detectable and or quantifiable attributes integrally associated with the carrier wherein individual carriers comprise all the attributes that define a corresponding code before commencing synthesis of a respective compound thereon wherein one of said attributes is not shape or surface deformation of the carrier (e.g., see column 3, lines 40-49, "Also included within the present invention is an assembly or collection of particles comprising a plurality of types of particles, wherein each particle is from 20 nm to 50 pm in length and is comprised of a plurality of segments, and wherein the types of particles are differentiable. In the preferred embodiments, the particle types are differentiable based on differences in the length, width or shape of the particles and/or the number, composition, length or pattern of said segments. In other embodiments, the particles are differentiable based on the nature of their functionalization."; see also column 9, paragraph 2 disclosing

half and half magnetic/optical properties). Please note that while one of the attributes may not be shape or surface deformation of the carrier that does not mean that the other one cannot be. Thus, the current claims read on nanobars that are distinctively labeled by shape and length or shape and segment composition, etc. see also column 9, "In many applications, the functionalization is different and specific to the specific flavor of nanoparticle [i.e., 100% are different]."; see also column 3, lines 40-56; see especially, 8, last full paragraph, "In certain embodiments, the members of the assembly are identical, while in other embodiments, the assembly is comprised of a plurality of different types of particles.")

Natan et al. disclose the plurality of carriers of claim 15 wherein at least one of said attributes of a respective carrier is comprised within or internally of the carrier (e.g., see column 3; lines 40-49 disclosing composition of segments; see also lines 54-56 disclosing the inclusion of dyes within the segments; see also column 16, second to last paragraph; see also column 8 describing the segments as being coated).

For ***claims 18-19***, Natan et al. disclose the plurality of carriers of claim 15 wherein at least one of said attributes of a respective carrier is an electromagnetic radiation related

attribute wherein the electromagnetic radiation related attributed is selected from the group consisting of fluorescence emission, luminescence, phosphorescence, infrared radiation, electromagnetic scattering including light and x-ray scattering, light transmittance, light absorbance, and electrical impedance and said radiation-related attributed includes, light emitting, light transmitting or light absorbing (e.g., see column 13, lines 45 and 46, "Thus, light scattering can identify the overall length of a nanobar code"; see also column 20, lines 31-46, "The ability to make complex bar codes is of no consequence without an effective method for reading the bar codes. Fortunately … bar codes … can be visualized using conventional light microscopy"; see also column 21; last paragraph disclosing the use of fluorescence microscopy in addition to light microscopy; see also column 25, line 40 disclosing the emission of light; see also column 15, paragraph 1, "a variety of detection mechanisms can be used , including but not limited to optical detection mechanisms (absorbance, fluorescence Raman, hyperRaman, Rayleigh scattering hyperRayleigh scattering, CARS, sum frequency generation … [etc]."; see also Example 5; Flow cytometry experiments have been employed to quantitate fluorescence from immunoassays or nanobar codes.

Natan et al. disclose the plurality of carriers of claim

15 wherein a respective carrier has at least three detectable and or quantifiable attributes integrally associated therewith (e.g., see column 5, last full paragraph wherein length, width, shape, segment composition are disclosed; see also column 3, lines 40-49).

For ***claim 21***, Natan et al. disclose the plurality of carriers of claim 17 wherein the electromagnetic radiation related attribute of a respective carrier is fluorescence and said carrier comprises a fluorescent dye (e.g., see figure 4; see also column 6, paragraph 1; see also column 15, paragraph 1; see also column 21, paragraphs 1 and 2; see also column 22, paragraphs 1-4; see also column 24, last paragraph; see especially column 29, lines 2 and 3).

For ***claim 22***, Natan et al. disclose the plurality of carriers of claim 15 wherein each carrier is a colloidal particle (e.g., see title; see also column 13, lines 35-37, "In addition, it is also possible to create colloidal rods containing three or more types of segments and with three or more orthogonal chemistries"; see also column 14, paragraphs 2 and 3; see also column 22, last paragraph).

For ***claims 23, 65 and 66,*** Natan et al. disclose the plurality of carriers of claim 15 wherein the carriers have different shapes selected from the group consisting of spheres,

cubes, rectangular, prisms, pyramids, cones, ovoids, sheets, or cylinders (e.g., see figure 1; see also column 6, lines 25 and 26, "In short, cylindrically-shaped nanoparticles offer surface properties that are useful for bioassay construction").

For ***claim 24***, Natan et al. disclose the plurality of carriers of claim 15 wherein the carriers have different forms selected form the group consisting of pellet, disc, capillary, hollow, fiber, needle, pin, and chip (e.g., see figure 1; see also column 18, line 5; see also column 45, line 10; see also column 2, paragraph 2).

Natan et al. disclose the plurality of carriers of claim 15 wherein the carriers have different sizes (e.g., see column 3, lines 49-49; see also column 13, lines 47-48; see especially column 16, paragraph 1).

For ***claim 26***, Natan et al. disclose the plurality of carriers of claim 22 wherein the colloidal particle is polymeric or ceramic particle (e.g., see column 3, paragraph 3, "The segments of the particles of the present invention may be comprised of polymeric materials"; see also column 9, line 59 disclosing the use of ceramic materials).

For ***claim 27***, Natan et al. disclose the plurality of carriers of claim 26 wherein the ceramic particle is a silica particle (e.g., see column 3, line 30 wherein glass is

disclosed).

For ***claim 28***, Natan et al. disclose the plurality of carriers of claim 26 wherein the carriers comprise ceramic particles with different diameters selected form about 0.01 to about 150 μm (e.g., see column 7, lines 9-15, "The width, or diameter, of the particles of the invention is within the range of 5nm-50μm").

For ***claim 29***, Natan et al. disclose the plurality of carriers of claim 15 wherein a respective carrier comprises functionalities selected from the group consisting of NH_2, COOH SOH, SSH, and sulfate (e.g., see column 10, paragraph 1 disclosing acids, amines, thiols, etc.).

For ***claim 63 and 64***, Natan et al. disclose the plurality of carriers according to claims 15 or 21 wherein said synthons are coupled to said carriers by a linker (e.g., see column 9, lines 49-40-47, "By functionalization, or attachment of a functional unit, it is meant that some species or material is covalently … attached to the surface of the particle. Examples of functionalization include the attachment, often via a linker, to an antibody or antibody fragment, to an oligonucleotide").

Claims 15, 18-29, 63 and 65-66, as amended, are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kauvar et al (USP 6642062) (as evidenced by Tao Jia-ping et al(Chinese Journal of Physical Medicine (Vol. 17(3), September 1995, p 168-171) and by applicants' disclosure of known prior art) for reasons set forth in the previous office action and reiterated below.

(Please note that the rejections and/or responses of the last Office action have been modified to address the present amendments to the claims and applicants' response.)

Kauvar discloses throughout the patent at e.g., col. 2, line 48 up to col. 5, lines 63:

> …[a] **label which comprises a particulate support to which is bound at least two signal generating moieties, which moieties generate signals that can be distinguished in situ, such as light of different wavelengths.** These labels are distinguishable by any instrumentation which contains separate means for detection for each of the at least two in situ signals generated.
>
> …. [a] collection of labels wherein the ratio of the moieties differs from label to label in the collection. Typically, this collection of labels provides identifiable members that number at least twenty…. Thus, if the reliability of detection of each color is plus or minus 10 percent, 10 gray labels exist for each signal and therefore 100 hues can be distinguished when **two signal generating moieties are included in each label.**
> This instrumentation provides **fluorescence excitation and capacity for detection of three separate wavelengths of**

light……Such beads are available commercially in several different colors of fluorophores with high uniformity in size and fluorophore doping levels from Flow Cytometry Standards Corp…..among others.

….[t]he number of reagents that can be separately detected under these conditions by systematic and precise doping of particulate supports with signal generating moieties, typically fluorophores, of different colors corresponding to the CCD detectors employed, at specified ratios. Particles with different ratios of the fluorophores generate different detection signals in this system. Because the ratios of the fluorophores can be varied at will, up to a point where a forced proximity of the dyes leads to quenching, many different "hues" can be generated in a collection of labeled particles, each particle type having a unique ratio and/or amount of color generating moieties.

As used herein, the term "label" is generally used to describe a particulate support to which has been bound an appropriate array of signal generating moieties. The signal-generating moieties must be such that the signals are detected in situ on the particulate support. Thus, it is unnecessary to detach the signal-generating moieties from the support in order to ascertain their ratio. Their ratio is read directly by means of the "hue" of the label. Color is a preferred signal. **The labels…..contain at least two, and preferably at least three, distinguishable signal generating moieties.**

As visible light is a particularly convenient way to generate a particular "hue,"… However, other signal generating moieties can be employed or an indirect method to generate visible light may be used. In addition, heavy atom clusters of different materials, **for example colloidal gold dots**(reads on e.g., claim 22) **versus ferrite rods offer different scattering characteristics with respect to electron microscope beams.** The preferred "color generating" moieties are typically fluorophores, but they can also generate a characteristic wavelength either by reflectance (simple dyes) or by emission (fluorophores or de novo light-generating compounds such as a luciferase or other chemiluminescent system). A number of chemiluminescent systems are known in the art such as horseradish

peroxidase-based generation of chemiluminescent products…. In addition to fluorescent dyes, phosphorescent materials (reads on claim 18) may also be employed which adds the advantage that time resolved fluorescence distinguishes signals that would be equivalent averaged over a longer detection period.

The supporting particles are typically 0.1-1 .mu.m in diameter and are preferably latex. However, smaller particles may also be used. Generally, 50 nm (0.05 .mu.m) is considered an approximate minimum; it has been possible in some contexts to use particles as large as 5 .mu.m, although this is not preferred.(Reads on claim 28). The use of larger particles results in lower diffusion rates and thus, effectively, less efficient and less vivid labeling. A preferred range is 100-500, preferably 100-300, and more preferably 100-200 nm diameter particles. The particulate supports are generally spherical, (reads on claim 65) and the microscopic techniques employed can distinguish spherical shapes from other general outlines. **Silica** gel particles may also be used. (reads on claims 26 and 27). Any particulate that has suitable physical properties (does not spontaneously aggregate, adhere, or otherwise fail to behave as an independent particle) and which can be suitably derivatized with the color generating moieties and with the test reagent may be used.

The construction of the particle itself affects the hue detected. In addition to differences attributed to the size of the particle, (reads on claim 25) as indicated above, the shape will determine the nature of the signal. Shapes can vary along the continuum of sphere to oval to rod to string, for example. Star shapes or other arbitrarily shaped particles can be created by x-ray lithography so as to have a distinctive point spread function. (Reads on claim 65.)

Accordingly, the specific carrier of Kauvar fully meets the claimed plurality of carriers with at least three detectable features.

Response to Arguments

Applicants argue that Kauvar does not teach the use of the multihued beads as a carrier for combinatorial synthesis rather, for combinatorial library screening. But acknowledge that Kauvar teaches that the addition of color generating moieties..."can be carried out in conjunction with the synthesis of the library members"...' (col. 9, line 35). That is, Kauvar teaches encoding the particles during the combinatorial synthesis. Applicants note that, even though Kauvar suggests coding during combinatorial synthesis, there is no disclosure of how to accomplish such coding. As discussed above, the instant claims recite "A plurality of carriers ... comprising a population of detectably distinct carriers ... each carrier having a code which distinctively identifies a respective carrier before, during and after a combinatorial synthesis from other carriers.

In reply, as correctly pointed out by applicants above, the claims are drawn to a compound and not to a combinatorial synthesis of the compound i.e., method of making. Further as acknowledged, that Kauvar teaches

encoding during the synthesis. Attention is drawn again to Kauvar's disclosure above which states, for example:

> This instrumentation provides fluorescence excitation and capacity for detection of three separate wavelengths of light……Such beads are available commercially in several different colors of fluorophores with high uniformity in size and fluorophore doping levels from Flow Cytometry Standards Corp…

Thus, before the synthesis the beads are already color coded which are commercially available. As applicants acknowledged Kauvar teaches encoding during synthesis. It is therefore inconceivable how it can be different after synthesis when Kauvar was able to identify and isolate these color coded beads. Cf. with the parent and instant disclosure of combinatorial synthesis and addition of the color coded beads only during combinatorial synthesis. So, read in light of the disclosure, except for the general statements and applicants' arguments, no prior and after encoding of the carriers are done except, like the prior art, logically during synthesis.

The Examiner cites the disclosure of Jai-ping in reference to detection of the Kauvar beads by flow cytometry. Applicants note that the cited passage in Kauvar refers only to colors of commercially available beads resolvable by color, and respectfully point out that the fact that flow cytometry could be used as a basis for bead differentiation does not mean that all beads analyzed by flow cytometry can be differentiated based on, e.g., codes such as those recited in the instant claims. Neither Kauvar nor Jai-ping teach or suggest that the beads of Kauvar are - or could be - distinctively identified by a code that is the same before, during and after combinatorial synthesis, as required by the instant claims.

Applicants argue that Kauvar adds labels during synthesis. As such, Kauvar never provides and does not teach or suggest a carrier that is coded prior to any compound synthesis and that maintains the same code before, during and after synthesis. As Kauvar does not teach or suggest the same product, Applicants respectfully submit that the holding of In re Thorpe is not applicable to the instant claims.

In reply, since applicants merely present the same arguments as above hence, the responses above are incorporated herein. Furthermore, In re Thorpe is applicable herein. The same color coded carrier or beads with synthons i.e., molecules contained therein are similarly taught by Kauvar. Most of applicants' arguments are drawn to combinatorial synthesis using said color coded beads to identify one compound from the other during synthesis. Applicants do not seem to dispute that the products, color coded beads/carriers are the same. Applicants have not shown that the placing of coding before, during and after combinatorial synthesis results in a different coded carriers.

Claim Rejections - 35 USC § 103

Claims 15, 18-29, 63 and 65-66, as amended, are rejected under 35 U.S.C. 103(a) as being unpatentable Kauvar or Seul (USP 7083914) in view of Yamashita(WO 95/32425) and either Kris et al (USP 6238869) or Kimura et al (USP 6228480) for reasons of record as reiterated below. (Please note that the rejections and/or responses of the last Office action

have been modified to address the present amendments to the claims and applicants' response.)

Kauvar is discussed above.

Seul et al discloses throughout the patent at e.g., col. 5, line 29 up to col. 6, line 56:

> …[c]olor codes for the purpose of uniquely labeling members of a group of beads or equivalent objects ("beads") to preserve the chemical identity of the beads and thus the identity of bead-coupled chemical compounds. These color codes are based on a set of encoding fluorophores of distinguishable wavelengths, excited-state lifetimes and levels of intensity, the latter controlled by adjusting the abundances of dyes.
>
> Binary and extended binary color codes offer large coding capacity and represent a general strategy to encode multi-step reaction histories such as those encountered in divide-couple-recombine (DCR) synthesis strategies for combinatorial chemical libraries.
>
> Simple and extended simple color codes offer an efficient strategy to encode a smaller set of distinct chemistries that are typical of panels displaying multiple targets or probes in biochemical assays including multi-agent diagnostic and environmental tests and other biochemical assays.
>
> All color codes can be augmented by varying distinguishable features of beads such as shape and size or other suitable physico-chemical parameter associated with bead cores such as polarizability.

Please see also all the drawing Figures.

Kauvar or Seul does not disclose the carrier as a silica microparticle as recited in e.g., claim 27 and the coding strategy before and after combinatorial synthesis.

Kris discloses throughout the patent at e.g., col. 5, lines 3-30:

> The surface (usually a solid) can be any of a variety of organic or inorganic materials or combinations thereof, including,…plastics such as polypropylene or polystyrene; ceramic; silicon; (fused) silica, quartz or glass microscope slide or a glass cover slip;..Substrates that are transparent to light are useful when the method of performing an assay involves optical detection….The shape of the surface is not critical. It can, for example, be a flat surface such as a square, rectangle, or circle; a curved surface; or a three dimensional surface such as a bead, particle, strand, precipitate, tube, sphere; etc.

Kimura et al discloses at e.g., col. 4, lines 15-45:

> If the adhesive layer is composed of a resin that contains colloidal silica, it is preferable if the diameter of colloidal silica particles is 10 nm or less……As a method to introduce such colloidal silica into the resin, it is known that a method to mix a resin solution with a colloidal silica solution, then apply it and subsequently dry it to form an adhesive layer is the easiest, however, a method to form an adhesive layer by allowing a resin to polymerization while dispersing colloidal silica in the resin and then to apply the synthesized resin and dry it, is also acceptable. It is also possible to use colloidal silica after treating it with a silane coupler for improving adhesive property and dispersibity of colloidal silica and a resin.
>
> As examples for a resin whereto colloidal silica is introduced, acryl resin, acryl-silicon resin, epoxy-silicon resin, silicon-modified resin, urethane resin, epoxy resin,

> polyester resin, alkyd resin, etc. are given, however, silicon-modified resins including acryl-silicon resin and epoxy-silicon resin, are the most suitable one in term of durability.
> As the colloidal silica, any silica sol, which is produced either by subjecting sodium silicate solution to cation exchange or by subjecting silicon alkoxide to hydrolysis, can be used.

Yamashita discloses that prior to encoding a synthetic step in each library, a sorting procedure is performed in which a group of similarly tagged beads is sorted into a number of containers corresponding to the number of different choices of building block or "synthon" for the synthetic step. The combinatorial libraries thus prepared will contain tagged beads that identify the reaction sequence of a single synthetic step (see page 15, lines 29- 32).

Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use silica microparticle as the carrier in the Kauvar's reference as taught by either Kris or Kimura. One would have a reasonable expectation or predictable result since as Kimura or Kris teaches silica or a large number of carriers has been successfully employed in the art for combinatorial library synthesis of compounds. Furthermore, it would have been obvious

to code a carrier prior to the combinatorial synthesis of the carrier of Kauvar as taught by Yamashita. One would have a reasonable expectation of success in coding the carrier of Kauvar prior to synthesis as this would identify or confirm uniquely the code during and after synthesis.

Response to Arguments

Applicants assert that for the reasons recited above, Applicants submit that none of these references teach or suggest each of the elements of the instant claims. Yamashita discloses the preparation of combinatorial libraries, which are synthesized on beads that are separated into pools or groups, wherein the beads within each group are similarly tagged and wherein each group is uniquely tagged (see page 5, lines 12 to 18). As noted in the Response filed on April 13, 2010, Yamashita does not teach or disclose a carrier having light scattering "features" that define the code that distinctively identifies its" respective carrier. Kris discloses the properties of certain solids. Kimura discloses the properties of certain adhesive layers and solids. Yamashita, Kris and Kimura fail to cure the deficiencies of Kauvar.

In reply, each of Kris and Kimura references are employed not for the purposes as argued. Rather. Kris and Kimura are employed for the disclosure of the advantages in the use of silica microparticle that provides the motivation to use or substitute said silica microparticle carrier for the carrier used by Kauvar. Thus, the combined teachings of the prior art render obvious the claimed plurality of carriers.

When considering obviousness of a combination of known elements, the operative question is thus "whether the improvement is more than the predictable use of prior art elements according to their established functions." KSR International Co. v. Teleflex Inc., 550 USPQ2d 1385 (2007).

There is nothing new and unobvious in the claim plurality of carrier for combinatorial library synthesis wherein the multitude of carriers is coded to identify or differentiate one from the other. Coding a multitude of carrier in a library which contains millions of compounds obviously facilitates identification of the synthesized compounds in the carrier.

Applicants' arguments with respect to Eger and Seul are moot in view of the withdrawal of these references in response to the amendments to the present claims.

Applicants acknowledge that the particles of Seul are tagged combinatorial synthesis. See, e.g., Seul at column 6, lines 47-54. But argue that Seul adds labels during synthesis. As such, Seul never provides and does not teach or suggest a carrier that is coded prior to any compound synthesis and that maintains the same code before, during and after synthesis.

In reply, the responses to applicants' arguments filed on April 13, 2010 are incorporated herein also. Furthermore, as pointed out the process steps of identifying a carrier before, during and after combinatorial synthesis does not make the product claim of Seul different from the instant product claim. As applicants admit above the code does not change before, during and after combinatorial synthesis, (which logically should not). Thus, the process limitation of before, during and after synthesis does not add any further limitation to the product claim carrier. In re Thorpe is applicable herein especially in the absence of any evidence to the contrary. Furthermore, as taught by Seul above “c]olor codes for the purpose of uniquely labeling members of a group of beads or equivalent objects ("beads") **to preserve** the chemical identity of the beads and thus the identity of bead-coupled chemical compounds.” This would imply before, during and after synthesis.

Applicants have not provided any evidence that new and unexpected results are obtained prior and after combinatorial synthesis, in fact, as explicitly admitted in the claims, the coded carrier remains the same throughout the process of combinatorial synthesis.

No claim is allowed.

[As suggested in the previous office action, claims drafted to recite a method of using or making that would differentiate from the method of the art, might make for an allowable claim.]

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will

expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TERESA WESSENDORF whose telephone number is (571)272-0812. The examiner can normally be reached on flexitime.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joanne Hama can be reached on 571-272-2911. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TERESA WESSENDORF/

Primary Examiner, Art Unit 1639